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FGGE/SBUV TAPE SPECIFICATION AND SHIPPING LETTER DESCRIPTION

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National Aeronautics and Space Administration

Goddard Space Flight Center
Greenbelt, Maryland 20771

FGGE/SBUV TAPE SPECIFICATION AND

SHIPPING LETTER DESCRIPTION

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5809 Annapolis Road
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Contract No. NAS5-26753
SSD-T-4-8234-006-82

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Abbreviations and Acronyms

BPI	-	Bytes Per Inch
ESDP	-	Experimental Satellite Data Producer (USA)
FGGE	-	First GARP Global Experiment
GARP	-	Global Atmospheric Research Program
GSFC	-	Goddard Space Flight Center
N-7	-	Nimbus-7 Spacecraft
NOCC	-	Nimbus Observatory Control Center
NOPS	-	Nimbus-7 Observation Processing System
OPT	-	Ozone Processing Team
SBUV	-	Solar Backscatter Ultraviolet instrument flown on N-7
TOMS	-	Total Ozone Mapping Specrometer instrument flown on N-7
WDC-A	-	World Data Center A (USA)
WDC-B	-	World Data Center B (USSR)

1. INTRODUCTION

The ESDP is responsible for the production of the FGGE/SBUV Level IIc data set. This data set consists of 12 data tapes, copies of which are stored at GSFC, WDC-A, and WDC-B. Each tape copy contains total ozone and ozone profile data for one calendar month grouped in files containing the data in a 6 hour synoptic time block. The tape copies are all 9-track tapes and are identical in content and format but do have different densities. The local archive at GSFC contains 6250 and 1600 BPI density versions, WDC-A contains a 1600 BPI version, and WDC-B contains a 800 BPI version.

This document briefly describes the data flow and quality checks in the production of this data set. In addition it also describes the format of the data tapes and the accompanying shipping documents. The tape format description is abstracted from "Appendix 10: Formats for the International Exchange of Level II Data Sets During the FGGE" in the FGGE Data Management Plan.

2. DATA SET PRODUCTION

2.1 Data Flow

The source of data for the FGGE/SBUV production system is the ozone data tapes produced by the NOPS/OPT and validated by the SBUV Nimbus Experiment Team (NET). The ozone data tapes are denoted as OZONE-S tapes and are described in a document entitled NOPS Tape Specification T634041 SBUV/TOMS OZONE-S (SBUV). Each OZONE-S tape contains a calendar week of data in chronological order grouped in files each containing data from one orbit of the spacecraft. The products of this system are the international exchange format data tapes denoted as FGGE/SBUV Level IIc data tapes and their accompanying shipping documentation described in sections 3 and 4 respectively, of this document.
The data flow for this process is shown in Figure 2.1-1.
The data sets and processes are described in Table 2.1-1 and Table 2.1-2, respectively.

2.2 Quality Checks

The objectives of the quality checks performed on the FGGE/SBUV Level IIc data tapes are to ensure that

a) There are no irrecoverable (permanent) read errors on each tape copy,

b) The FGGE formatted data is a valid representation of the data on the OZONE-S tapes,

c) All of the data is accounted for.

The first objective is met by processing each Level IIc tape through the SBUVDP program step. No tape is accepted for archive or shipment unless it has no read errors and produces the expected tape summary printouts. The second objective was first met by successful completion of a test plan which dictated that the Level IIc data must produce the same printout as the parent OZONE-S data when processed through a program provided by the OPT. On a continuing basis during production, the SBUV2C step checks parameter values against expected range limits provided by the OPT and tests quality and error flags on the OZONE-S tape for consistency with data content. Data anomalies and summaries are printed by the SBUV2C program and are individually verified. No data verified to be erroneous are on the final edition of the FGGE/SBUV Level IIc data tapes.

The third objective is met by reconciling missing synoptic periods with the SBUV instrument status history provided by NOCC and data not available report provided by the OPT. The status history lists the times when the instrument was turned on or off and when changes were made in the SBUV operating mode (step scan/continuous scan/non-scanning). The 'data not available' report lists orbits for which ozone observations should have been possible but were not because of acquisition or processing problems. The second section of the shipping letter includes comments indicating the reason for missing synoptic periods.

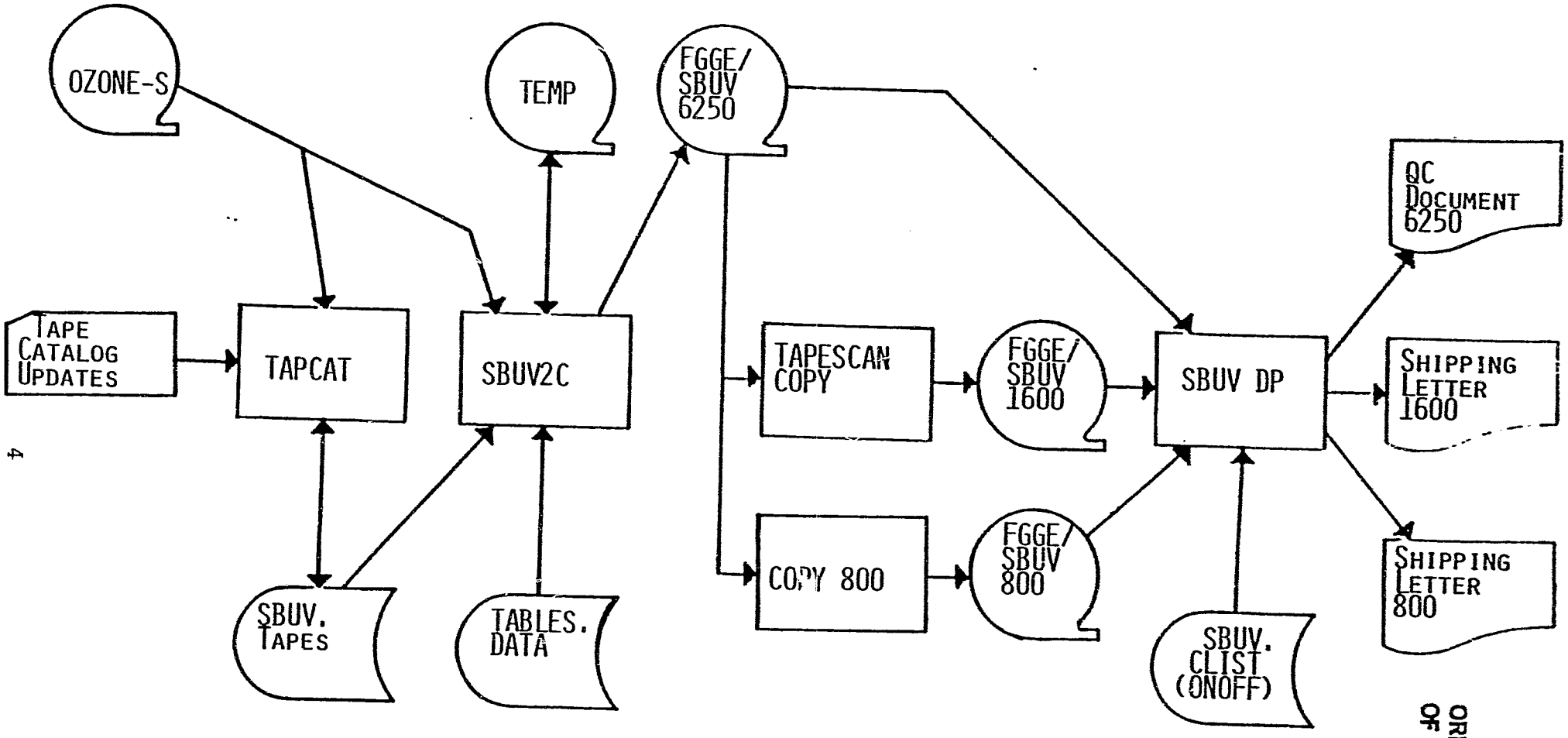


FIGURE 2.1-1 FGGE/SBUV LEVEL IIc DATA FLOW

Table 2.1-1: FGGE/SBUV Level IIc Production System Data Sets

NAME	SOURCE	DESCRIPTION
OZONE-S	NOPS/OPT	source tape of SBUV ozone data
SBUV.TAPES	internal (TAPCAT)	catalog of SBUV OZONE-S tapes containing o NOPS tape sequence number o time span of data o call number (location) in tape library
TABLES.DATA	internal	card images of tables from Appendix 10 in the FGGE Data Management Plan.
TEMP	internal	intermediate product tape containing data files for the FGGE/SBUV Level IIc output tape

Table 2.1-1: FGGE/SBUV Level IIc Production System Data Sets (Cont'd)

NAME	SOURCE	DESCRIPTION
FGGE/SBUV(6250)	internal (SBUV2C)	local archive FGGE/SBUV Level IIc data tape containing o test file o tape header file o data files copied from TEMP
FGGE/SBUV(1600)	internal (TAPESCAN)	FGGE/SBUV Level IIc tape for shipment to WDC-A
FGGE/SBUV(800)	internal (COPY800)	FGGE/SBUV Level IIc tape for shipment to WDC-B
SBUV.CLIST (ONOFF)	NOCC	table of SBUV operational status by time interval specifying o ON/OFF times of SBUV instrument o mode of operation(step or continuous scan) o missing(unprocessed data)

Table 2.1-1: FGGE/SBUV Level IIc Production System Data Sets (Cont'd)

NAME	SOURCE	DESCRIPTION
QC Document Shipping Letter (1600) Shipping Letter (800)	internal (SBUVDP)	printout derived from the contents of the local archive, WDC-A, and WDC-B copies, respectively, of the FGGE/SBUV Level IIc data tapes.

Table 2.1-2: FGGE/SBUV Level IIc Production System Processes

PROCESS NAME	DATA SETS	DATA SET TYPES	PROCESS DESCRIPTION
TAPCAT	Tape catalog update (control cards)	IN	read control cards specifying o SBUV.TAPES library o operation to be performed (make new entry; delete old entry)
	SBUV.TAPES	IN/OUT	read to verify correct library accessed; write to update catalog
	OZONE-S	IN	obtain NOPS sequence number, start/end time of data for tape catalog entry
SBUV2C	control cards	IN	specify time interval to be processed
	SBUV.TAPES	IN	specify location of tapes with desired time interval for processing
	OZONE-S TEMP FGGE/SBUV (6250)	IN OUT/IN OUT	for data in specified time interval o printout diagnostic information for quality checks o reformat data and write to TEMP o build tape header file o write test file and tape header file and copy TEMP tape to FGGE/SBUV(6250)

Table 2.1-2: FGGE/SBUV Level IIc Production System Processes

PROCESS NAME	DATA SETS	DATA SET TYPES	PROCESS DESCRIPTION
TAPESCAN	control cards	IN	copy local archive to WDC-A copy
	FGGE/SBUV(6250)	IN	
	FGGE/SBUV (1600)	OUT	
COPY800	control cards	IN	copy local archive to WDC-B copy
	FGGE/SBUV (6250)	IN	
	FGGE/SBUV(800)	OUT	
SBUVDP	control cards	IN	read FGGE/SBUV tape and produce print-out o summarizing contents of the tape o verifying no permanent read errors o listing by time period SBUV mode of operation
	FGGE/SBUV (6250)	IN	
	or		
	FGGE/SBUV (1600)	IN	
	or		
	FGGE/SBUV (800)	IN	
	or		
	SBUV.CLIST (ONOFF)	IN	

3. TAPE FORMAT DESCRIPTION

3.1 Tape Structure Record

The FGGE/SBUV tapes contain data extracted from the Nimbus-7 SBUV OZONE-S tapes and reformatted in accordance with the FGGE Level II International Exchange Format specifications. In describing the general FGGE/SBUV tape specifications, there are three areas of interest. These are the physical tape characteristics, the tape organization, and the data organization. Each of these topics is discussed below.

3.1.1 Physical Tape Characteristics

All FGGE/SBUV tapes will have the following physical characteristics:

	WDC-A (Washington)	WDC-B (Moscow)
Number of tracks	9	9
Tape recording density	1600 bpi	800 bpi
Tape recording mode	PE	NRZI
Tape recording code	EBCDIC	EBCDIC
Tape recording parity	Odd	Odd

3.1.2 Tape Organization

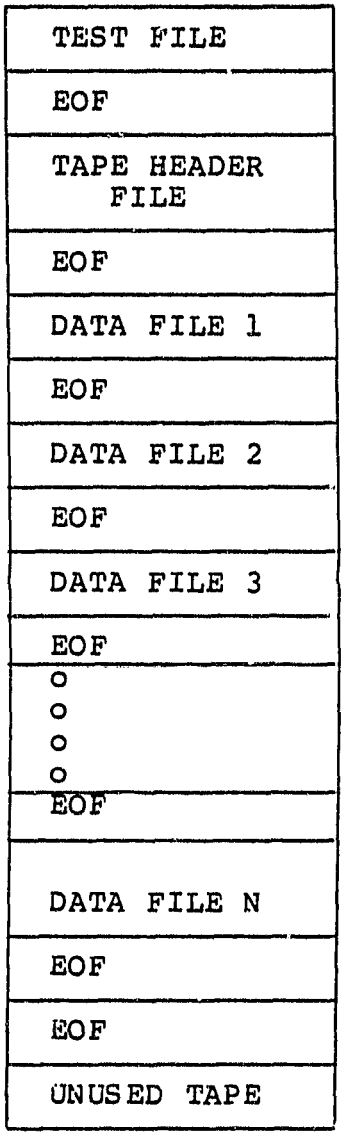
The tape organization is shown on the next page. There are three types of files. The first file on the tape is the test file. The second file on the tape is the tape header file. The remaining one or more files are data files. All files are terminated with a single end of file (EOF) mark. The last data file is terminated with two end of file (EOF) marks.

All files are made up of one or more physical records. Each physical record contains 2960 bytes. The test file and the data files have physical records which contain 80 logical records, each containing 37 bytes. The tape header file has physical records which contain 37 logical records, each containing 80 bytes. Each of these files is described in detail later.

3.1.3 Data Organization on the Tape

The data organization refers to how the data values are organized into files and records on the FGGE/SBUV tapes. The data values are grouped chronologically into six-hour synoptic time periods and stored in the data files. The six-hour synoptic periods are defined as follows (2100:01 represents hour 21, minute 00, second 01):

BEGINNING OF TAPE



ENDING OF TAPE

FIGURE 3-1. TAPE ORGANIZATION

TABLE FOR MAJOR TIME

FIRST DATA	SYNOPTIC TIME	LAST DATA
2100:01	0000	0300:00
0300:01	0600	0900:01
0900:01	1200	1500:01
1500:01	1800	2100:01

Each data file contains all available data values for a six-hour synoptic time period. The data files are stored on the tape in increasing time order. The last data file on the tape must be complete (not split between reels). If no data is available for a particular synoptic period, then the file will not be written.

The total time period covered by the data on a single tape is variable. At the time that an FGGE/SBUV tape is produced, up to fifty time intervals can be specified. All observations falling within any of these time intervals are then included on the FGGE/SBUV tape, grouped into files on a synoptic time period basis as described earlier. (Multiple time intervals are allowed in order to provide the capability to exclude data taken during time intervals when the validity of the data values is questionable, e.g., during instrument malfunction.)

The software program which generates the FGGE/SBUV tapes ensures that duplicate files for a specific synoptic period are not stored on a single tape, but it is the responsibility of the user generating the tapes to ensure that such duplicate files do not occur across separate tapes.

3.2 Test File Format Record

The test file is the first file on the tape. The test file has physical records which contains 80 logical records, each containing 37 bytes. This file occupies about 20 meters of the tape (350 blocks at 1600 bpi; 200 blocks at 800 bpi). Each block is 2960 bytes long, and consists of all "1" bits.

3.3 Header File Format

The header file is the second file on the tape. It contains EBCDIC-coded text information, with 80 bytes per logical record and 37 records per block (2960 bytes per block). The header file describes the data, giving the data source, the agency involved (NASA), and the data coverage. The header file also contains the tables of codes presented in the FGGE International Data Management Plan, Appendix 10, Appendix A. Following the tables is a short section containing the FORTRAN formats for reading the data. The last block of the file is padded with blanks, if needed. The first fifteen logical records are shown in Figure 3-2. The contents of these logical records are as follows.

```
FGGE  4564791101007911301 9
NAME:     NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

ADDRESS:  GODDARD SPACE FLIGHT CENTER (GSFC)
          GREENBELT, MARYLAND 20771
          UNITED STATES OF AMERICA (USA)
SCIENTIST: GARY N WOLFORD
DATE:     MON OCT 25,1982
0123456789=:> /STUVWXYZ.(-JKLMNOPQR*)$+ABCDEFGHI.)(<
TAPE CHARACTERISTICS: 9 TRACK, 800 BPI, CODE EBCDIC, MODE NRZI, PARITY ODD
TAPE CONTENTS: THIS TAPE CONTAINS   TOTAL AND PROFILE OZONE     DATA THAT WAS
DERIVED FROM THE SBUV INSTRUMENT FLOWN ON THE NIMBUS-7 EXPERIMENTAL SATELLITE.
THIS TAPE CONFORMS WITH THE FGGE LEVEL2B INTERNATIONAL EXCHANGE FORMAT.  ALL
AVAILABLE DATA FROM 79 10 31 21 00 TO 79 11 30 20 24 IS SUPPLIED.
```

Figure 3-2. Tape Header Record - First Fifteen Logical Records

Record 1: The first logical record contains the project title (FGGEbb), the producer code (4564), and the beginning and ending synoptic time periods contained on the tape.

The synoptic times are variable data and contain the major synoptic times of the first and last data files on the tape. There are two-byte fields for the year (YF, YL), the month (MF, ML), the day (DF, DL), and the hour (HF, HL) of the first and last major synoptic times. The character F indicates the first major synoptic time and L the last major synoptic time. The year field represents the last two digits of the year. As an example, 1978 would be represented by an EBCDIC-coded 78. The month values range from 01 to 12. The day values range from 01 to 31. The hour values are either 00, 06, 12, or 18.

Record 2: The second logical record contains the name of the producing office.

Record 3: The third logical record is filled with EBCDIC coded blanks.

Records 4-6: The fourth through the sixth logical records contain the address and country of the producing office.

Record 7: The seventh logical record contains the name of the scientist making the data available. This person is also the person to contact for more information about the data.

Record 8: The eighth logical record contains the date the tape was written. The data is variable data. The day name field (WWW) contains the first three characters of the day of the week (e.g., TUE). The month field (MMM) contains the first three characters of the name of the month (e.g., JAN). The day number field (DD) contains the numeric day within the month; its values range from 01 to 31. The year field (YYYY) contains four bytes which represent the year.

Record 9: The ninth logical record contains a translation table which will be stored exactly as shown in Figure 3-1.

Record 10: The tenth logical record contains information on the physical tape characteristics.

Record 11-15: The eleventh through the fifteenth logical records contain a description of the tape contents. The variable field in the eleventh logical record will contain the following character string to describe parameter data stored on the tape.

TOTALbANDbPROFILEbOZONEbbbbbb

The variable fields in the fourteenth logical record contain the beginning and ending year (YB, YE), month (MB, ME), day (DB, DE) hour (HB, HE), and minute (NB, NE) of the time period represented by the tape. These beginning and ending times represent the search interval used in producing the tape. They differ from the first and last major synoptic times stored in the first logical record of the tape header file.

3.4 Organization of Data Within a Data File

The first logical record in a data file is the file header logical record. This logical record contains information on the data contained in the file. Following the file header logical record are data records, for six hours of observations sorted in time increasing order.

The first logical record in a report is the report identification logical record (See TABLE IV-(a) in the Appendix). The report identification logical record contains information on the data contained in the report. The total ozone is given in the first record of each report. If the profile ozone data is present, the report will contain 9 logical records. Record 2 contains the time and location for the profile (See TABLE IV-(g) in the Appendix). Records 3-6 contain the profile ozone amounts, and standard deviations (See TABLE IV-(h) in the Appendix). Records 7-9 contain the ozone mixing ratios (See TABLE IV-(i) in the Appendix).

The last data logical record in the file is followed by an end of data logical record. Following the end of data logical record, a sufficient number of fill logical records are stored to complete the current physical record. Note that reports are not constrained to begin or end on physical record boundaries. The logical records are stored sequentially and continuously, with physical record boundaries occurring after each group of 80 logical records.

4. SHIPPING LETTER DESCRIPTION

The Shipping letter contains the summary of the data on the tape. First part of the shipping letter (marked I in the sample shipping letter) is generated through the SBUVDP program with option=0. It contains the following information:

(i) Print level of the SBUVDP program, input and output tape designation and tape slot number.

(ii) First fifteen logical records of the tape header file.

(iii) Summary of each file which contains file header, number of logical records in the file, number of blocks in the file, number of reports with total ozone only, number of reports with total and profile of ozone, and summary of the file and report errors.

Second part of the shipping letter (marked II) is the list of missing synoptic periods with comments indicating the reason for their absence. A sample shipping letter is included in the following pages.

I

S B U V D P P R O G R A M

PRINT LEVEL = 0
FILE HEADER DUMP = OFF
REPORT HEADER DUMP = OFF
DATA RECORD DUMP = OFF
TAPE DESIGNATOR UA1310
SLOT NUMBER L2735

i

```
**************************
*                        *
*  FGGE TAPE   UA1310    *
*                        *
**************************
```

END FILE 1 - TEST FILE: 350 BLOCKS. 0 I/O ERRORS. 0 BLOCK ERRORS

TAPE HEADER FILE:

FGGL 45647:0901007:093018
NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

ADDRESS: GODDARD SPACE FLIGHT CENTER (GSFC)
GREENBELT, MARYLAND 20771
UNITED STATES OF AMERICA (USA)
SCIENTIST: GARY N MCLEOD
DATE: MON SEP 30,1981
0123456789:;<=> /STUVWXYZ.(-JKLMNUPQR*)$*ABCDEFGHI.)(<
TAPE CHARACTERISTICS: 9 TRACK,1600 BPI,CODE EBCDIC,MODE PE,PARITY ODD
TAPE CONTENTS: THIS TAPE CONTAINS TOTAL AND PROFILE OZONE DATA THAT WAS DERIVED FROM THE SBUV INSTRUMENT FLOWN ON THE NIMBUS-7 EXPERIMENTAL SATELLITE. THIS TAPE CONFORMS WITH THE FGGE LEVEL2B INTERNATIONAL EXCHANGE FORMAT. ALL AVAILABLE DATA FROM 79 03 31 21 00 TO 79 05 30 20 20 IS SUPPLIED.

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END FILE 2 - TAPE HEADER FILE: 28 BLOCKS 0 I/O ERRORS

FILE #	FILE HEADER YYMMDDHH	# LOGICAL RECORDS	# BLOCKS	# REPORTS WITH TOTAL ONLY	# REPORTS WITH TOTAL & PROFILE	TAPE I/O ERROR	--FILE ERRORS-- NO FDH	NO ECC	NO ECF	---REPORT ERRORS---- NO FDH	LEN ERR	GMT MISMATCH
1			350			0						
2			28			0						
3	H0479090100004Z	1008	13	0	112	0	0	0	0	0	0	0
4	H0479090112004Z	801	11	0	69	0	0	0	0	0	0	0
5	H0479090118004Z	2583	33	0	287	0	0	0	0	0	0	0
6	H0479090200004Z	2143	27	1	239	0	0	0	0	0	0	0
7	H0479090206004Z	2403	31	0	267	0	0	0	0	0	0	0
8	H0479090212004Z	3222	41	0	358	0	0	0	0	0	0	0
9	H0479090218004Z	2484	32	0	276	0	0	0	0	0	0	0
10	H0479090300004Z	3057	39	1	341	0	0	0	0	0	0	0
11	H0479090306004Z	2511	32	0	279	0	0	0	0	0	0	0
12	H0479090312004Z	2934	37	0	326	0	0	0	0	0	0	0
13	H0479090318004Z	2772	35	0	303	0	0	0	0	0	0	0
14	H0479090400004Z	2773	35	1	303	0	0	0	0	0	0	0
15	H0479090406004Z	2988	38	0	332	0	0	0	0	0	0	0
16	H0479090412004Z	2538	32	0	282	0	0	0	0	0	0	0
17	H0479090418004Z	3087	39	0	343	0	0	0	0	0	0	0
18	H0479090500004Z	1647	21	0	183	0	0	0	0	0	0	0
19	H0479090600004Z	150	6	0	50	0	0	0	0	0	0	0
20	H0479090606004Z	2133	27	0	237	0	0	0	0	0	0	0
21	H0479090612004Z	2764	35	1	307	0	0	0	0	0	0	0
22	H0479090618004Z	2826	36	0	314	0	0	0	0	0	0	0
23	H0479090700004Z	2859	37	0	322	0	0	0	0	0	0	0
24	H0479090706004Z	1701	22	0	189	0	0	0	0	0	0	0
25	H0479090712004Z	3087	39	0	343	0	0	0	0	0	0	0
26	H0479090718004Z	2350	30	1	261	0	0	0	0	0	0	0
27	H0479090800004Z	1242	16	0	138	0	0	0	0	0	0	0
28	H0479090806004Z	1656	21	0	184	0	0	0	0	0	0	0
29	H0479090812004Z	2295	29	0	255	0	0	0	0	0	0	0
30	H0479090818004Z	2594	33	1	287	0	0	0	0	0	0	0
31	H0479090900004Z	1629	21	0	181	0	0	0	0	0	0	0
32	H0479091112004Z	567	7	0	61	0	0	0	0	0	0	0
33	H0479091118004Z	2934	37	0	326	0	0	0	0	0	0	0
34	H0479091200004Z	1782	23	0	198	0	0	0	0	0	0	0
35	H0479091206004Z	2751	35	1	310	0	0	0	0	0	0	0
N	H0479[illegible]	[illegible]			[illegible]	[illegible]	[illegible]					

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ORIGINAL PAGE IS
OF POOR QUALITY

37	H04790912180042	2633	33	1	293	0	0	0	0	0	0	0
38	H04790913000042	1377	18	0	153	0	0	0	0	0	0	0
39	H04790914000042	1386	18	0	154	0	0	0	0	0	0	0
40	H04790914060042	2205	23	0	245	0	0	0	0	0	0	0
41	H04790914120042	2943	37	0	327	0	0	0	0	0	0	0
42	H04790914180042	1944	25	0	216	0	0	0	0	0	0	0
43	H04790915000042	2795	36	0	311	0	0	0	0	0	0	0
44	H04790915060042	2898	37	0	322	0	0	0	0	0	0	0
45	H04790915120042	2646	34	0	294	0	0	0	0	0	0	0
46	H04790915180042	2305	27	1	256	0	0	0	0	0	0	0
47	H04790916000042	1638	21	0	182	0	0	0	0	0	0	0
48	H04790916120042	1782	23	0	198	0	0	0	0	0	0	0
49	H04790916180042	1143	15	0	127	0	0	0	0	0	0	0
50	H04790917000042	1062	14	0	118	0	0	0	0	0	0	0
51	H04790918060042	2700	34	0	300	0	0	0	0	0	0	0
52	H04790918120042	2277	29	0	253	0	0	0	0	0	0	0
53	H04790918180042	2304	29	0	256	0	0	0	0	0	0	0
54	H04790919000042	3213	41	0	357	0	0	0	0	0	0	0
55	H04790919060042	2502	32	0	278	0	0	0	0	0	0	0
56	H04790919120042	3177	40	0	353	0	0	0	0	0	0	0
57	H04790919180042	2529	32	1	281	0	0	0	0	0	0	0
58	H04790920000042	2808	36	0	312	0	0	0	0	0	0	0
59	H04790920060042	2736	35	0	304	0	0	0	0	0	0	0
60	H04790920120042	2817	36	0	313	0	0	0	0	0	0	0
61	H04790920180042	1935	25	0	215	0	0	0	0	0	0	0
62	H04790921000042	1639	21	0	182	0	0	0	0	0	0	0
63	H04790923000042	1621	21	1	180	0	0	0	0	0	0	0
64	H04790923060042	2772	35	0	308	0	0	0	0	0	0	0
65	H04790923120042	2070	26	0	230	0	0	0	0	0	0	0
66	H04790923180042	2350	30	1	261	0	0	0	0	0	0	0
67	H04790924000042	2925	37	0	325	0	0	0	0	0	0	0
68	H04790924060042	2349	30	0	261	0	0	0	0	0	0	0
69	H04790924120042	3204	41	0	356	0	0	0	0	0	0	0
70	H04790924180042	2178	28	0	242	0	0	0	0	0	0	0
71	H04790925000042	1656	21	0	184	0	0	0	0	0	0	0
72	H04790926000042	1197	15	0	133	0	0	0	0	0	0	0
73	H04790926060042	2781	35	0	309	0	0	0	0	0	0	0
74	H04790926120042	2663	34	1	296	0	0	0	0	0	0	0
75	H04790926180042	2979	38	0	331	0	0	0	0	0	0	0
76	H04790927000042	2520	32	0	280	0	0	0	0	0	0	0
77	H04790927060042	3132	40	0	348	0	0	0	0	0	0	0
78	H04790927120042	2448	31	0	272	0	0	0	0	0	0	0
79	H04790927180042	3033	38	0	337	0	0	0	0	0	0	0
80	H04790928000042	2412	31	0	268	0	0	0	0	0	0	0
81	H04790928060042	2016	26	0	224	0	0	0	0	0	0	0
82	H04790928120042	2709	34	0	301	0	0	0	0	0	0	0
83	H04790928180042	2817	36	0	313	0	0	0	0	0	0	0
84	H04790929000042	2790	35	0	310	0	0	0	0	0	0	0
85	H04790929060042	2628	33	0	292	0	0	0	0	0	0	0
86	H04790929120042	3060	39	0	340	0	0	0	0	0	0	0
87	H04790929180042	2448	31	0	272	0	0	0	0	0	0	0
88	H04790930000042	3195	40	0	355	0	0	0	0	0	0	0
89	H04790930060042	2421	31	0	269	0	0	0	0	0	0	0
90	H04790930120042	3159	40	0	351	0	0	0	0	0	0	0
91	H04790930180042	2466	31	0	274	0	0	0	0	0	0	0
TOTALS :		211072	3062	13	23451	0	0	0	0	0	0	0

PASSED

(II)

FILL	SYNOPTIC TIME	EXPERIMENT STATUS			
3	79090100	ON			
		OFF	AT	05/31/79 23:28	
MISSING	79090106	OFF			
4	79090112	OFF			
		ON	AT	05/31/79 13:52	
5	79090118	ON			
6	79090200	ON			
7	79090206	ON			
8	79090212	ON			
9	79090218	ON			
10	79090300	ON			
11	79090306	ON			
12	79090312	ON			
13	79090318	ON			
14	79090400	ON			
15	79090406	ON			
16	79090412	ON			
17	79090418	ON			
18	79090500	ON			
		OFF	AT	05/05/79 00:28	
MISSING	79090506	OFF			
MISSING	79090512	OFF			
MISSING	79090518	OFF			
19	79090600	OFF			
		ON	AT	05/06/79 01:32	
20	79090606	ON			
21	79090612	ON			
22	79090618	ON			
23	79090700	ON			
24	79090706	ON			
25	79090712	ON			
26	79090718	ON			
27	79090800	ON			
28	79090806	ON			
29	79090812	ON			
30	79090818	ON			
31	79090900	ON			
		OFF	AT	05/09/79 00:20	
MISSING	79090906	OFF			
MISSING	79090912	OFF			
MISSING	79090918	OFF			
MISSING	79091000	OFF			
		ON	AT	05/10/79 00:30	NON- STEP MODE -- G2CNE DERIVATION NOT POSSIBLE
MISSING	79091006	ON			NON- STEP MODE -- G2CNE DERIVATION NOT POSSIBLE
MISSING	79091012	ON			NON- STEP MODE -- G2CNE DERIVATION NOT POSSIBLE
MISSING	79091018	ON			NON- STEP MODE -- G2CNE DERIVATION NOT POSSIBLE
MISSING	79091100	ON			NON- STEP MODE -- G2CNE DERIVATION NOT POSSIBLE
MISSING	79091106	ON			NON- STEP MODE -- G2CNE DERIVATION NOT POSSIBLE
32	79091112	ON			NON- STEP MODE -- G2CNE DERIVATION NOT POSSIBLE
		ON	AT	05/11/79 13:50	
33	79091118	ON			
34	79091200	ON			
35	79091206	ON			
36	79091212	ON			
37	79091218	ON			
38	79091300	ON			
		OFF	AT	05/12/79 23:46	
MISSING	79091306	OFF			
MISSING	79091312	OFF			
MISSING	79091318	OFF			
39	79091400	OFF			
		ON	AT	05/13/79 23:55	
40	79091406	ON			
41	79091412	ON			
42	79091418	ON			
43	79091500	ON			
44	79091506	ON			
45	79091512	ON			
46	79091518	ON			
		ON	AT	05/15/79 20:53	MISSING ORBITAL DATA
MISSING	79091600	ON			MISSING ORBITAL DATA
47	79091606	ON			MISSING ORBITAL DATA
		ON	AT	05/16/79 06:24	
48	79091612	ON			
49	79091618	ON			
		ON	AT	05/16/79 13:54	MISSING ORBITAL DATA

50	79091700	ON			
		OFF	AT	09/17/79	00:47
MISSING	79091706	OFF			
MISSING	79091712	OFF			
MISSING	79091718	OFF			
MISSING	79091800	OFF			
		ON	AT	09/18/79	02:45
51	79091806	ON			
52	79091812	ON			
53	79091818	ON			
54	79091900	ON			
55	79091906	ON			
56	79091912	ON			
57	79091918	ON			
58	79092000	ON			
59	79092006	ON			
60	79092012	ON			
61	79092018	ON			
62	79092100	ON			
		OFF	AT	09/21/79	00:33
MISSING	79092106	OFF			
MISSING	79092112	OFF			
MISSING	79092118	OFF			
MISSING	79092200	OFF			
		ON	AT	09/22/79	00:38
MISSING	79092206	ON			
MISSING	79092212	ON			
MISSING	79092218	ON			
63	79092300	ON			
		ON	AT	09/22/79	23:30
64	79092306	ON			
65	79092312	ON			
66	79092318	ON			
67	79092400	ON			
68	79092406	ON			
69	79092412	ON			
70	79092418	ON			
71	79092500	ON			
		OFF	AT	09/24/79	23:51
MISSING	79092506	OFF			
MISSING	79092512	OFF			
MISSING	79092518	OFF			
72	79092600	OFF			
		ON	AT	09/26/79	00:20
73	79092606	ON			
74	79092612	ON			
75	79092618	ON			
76	79092700	ON			
77	79092706	ON			
78	79092712	ON			
79	79092718	ON			
80	79092800	ON			
81	79092806	ON			
82	79092812	ON			
83	79092818	ON			
84	79092900	ON			
85	79092906	ON			
86	79092912	ON			
87	79092918	ON			
88	79093000	ON			
89	79093006	ON			
90	79093012	ON			
91	79093018	ON			

NON- STEP MODE -- OZONE DERIVATION NOT POSSIBLE
NON- STEP MODE -- OZONE DERIVATION NOT POSSIBLE
NON- STEP MODE -- OZONE DERIVATION NOT POSSIBLE
NON- STEP MODE -- OZONE DERIVATION NOT POSSIBLE

Appendix

Addition and modification of FGGE Data Management Plan.

Some of the tables in the Appendix 10 of the FGGE Data Management Plan have been modified. In the following pages, new tables which are needed for the FGGE/SBUV tape format are listed.

TABLE IV

Satellite Sounding Format
(a) Report Identification

PARAMETER	NO. OF CHARACTERS	POSITION NUMBER	UNITS	REMARKS
Report Identification flag[1]	1	1		Unique Character*
Data Source Index	2	2-3	code figure	See Appendix A, Table I
Total Ozone	3	4-6	Dobson units	1 Dobson Unit 10^{-3} atm-cm
Total Ozone quality flag	2	7-8	code figure	See Appendix A, Table XLI
Seconds[3]	2	9-10		00-59
Indicator for data processing technique used	2	11-12	code figure	See Appendix A, Table XVI

Latitude[2]	5	13-17	Degrees and hundredths	North = +; South = -
Longitude	5	18-22	Degrees and hundredths	From 0.00 to 359.99E
Instrument type	2	23-24	code figure	See Appendix A, Table II
Year[3]	2	25-26	Last two digits	78 = 1978
Month[3]	2	27-28		01-12, January-December
Day[3]	2	29-30		01-31
Hour[3]	2	31-32		00-23 GMT
Minutes[3]	2	33-34		00-59
Number of logical Records[4]	3	35-37		Number of logical records in the reports

1 For positive identification of the report-identification record, the unique character asterisk (*) will always be used.
2 For SBUV data, this is location of total ozone value.
3 For SBUV data, this is time of total ozone value.
4 For SBUV data, this is one or greater. If no profile data are available, this will be the only record in the report.

(g) Second record in SBUV ozone observation[1]

PARAMETER	NO. OF CHARACTERS	POSITION NUMBER	UNITS	REMARKS
Latitude	5	1-5	10^{-2} deg.	Average latitude for profile; North=+, South=-; differs from total ozone latitude by up to approx. 1 deg.
Longitude	5	6-10	10^{-2} deg.	Average longitude for profile; from 0.00 to 359.99 (always positive); differs from total ozone longitude by up to approx. 1 deg.
Indicator for data processing technique used	2	11-12	code figure	See Appendix A, Table XVI
Year	2	13-14	last two digits	78-1978
Day	2	17-18		01-12, January-December
Hour	2	19-20		00-23 GMT
Minutes	2	21-22		00-59
Seconds	2	23-24		00-59
Not used	13	25-37		

1 This record and subsequent profile data records will be present in report only if the SBUV observation generated acceptable profile data.

(h) Record for layer ozone amount data [1]

PARAMETER	NO. OF CHARACTERS	POSITION NUMBER	UNITS	REMARKS
SBUV record type	1	1	code figure	1=vertical profile data, 2=ozone mixing ratio data
First pressure layer XLII	2	2-3	code figure	See Appendix A, Table
First layer, ozone amount	5	4-8	10^{-5} atm-cm	
First layer, standard deviation	5	9-13	10^{-5} atm-cm	
Second pressure layer	2	14-15	code figure	See Appendix A, Table XLII
Second layer, ozone amount	5	16-20	10^{-5} atm-cm	
Second layer, standard deviation	5	21-25	10^{-5} atm-cm	
Third pressure layer	2	26-27	code figure	See Appendix A, Table XLII
Third layer, ozone amount	5	28-32	10^{-5} atm-cm	
Third layer standard deviation	5	33-37	10^{-5} atm-cm	

1 All pressure layer codes will be present. Associated ozone amount and/or standard deviation may be set to fill value (nines, signed negative). Unneeded fields in a logical record will be set to fill value.

(i) Record for ozone mixing ratio data[1]

PARAMETER	NO. OF CHARACTERS	POSITION NUMBER	UNITS	REMARKS
SBUV record type	1	1	code figure	1=vertical profile data, 2=ozone mixing ratio data
First pressure level	2	2-3	code figure	See Appendix A, Table XLIII
First level, ozone mixing ratio	4	4-7	10^{-2} gm/gm	
Second pressure level	2	8-9	code figure	See Appendix A, Table XLIII
Second level, ozone mixing ratio	4	10-13	10^{-2} gm/gm	
Third pressure level	2	14-15	code figure	See Appendix A, Table XLIII
Third level, ozone mixing ratio	4	16-19	10^{-2} gm/gm	
Fourth pressure level	2	20-21	code figure	See Appendix A, Table XLIII

1 All pressure layer codes will be present. Associated ozone amount and/or standard deviation may be set to fill value (nines, signed negative). Unneeded fields in a logical record will be set to fill value.

Fourth level, ozone mixing ratio	4	22-25	10^{-2} gm/gm	
Fifth pressure level	2	26-27	code figure	See Appendix A, Table XLIII
Fifth level, ozone mixing ratio	4	28-31	10^{-2} gm/gm	
Sixth pressure level	2	32-33	code figure	See Appendix A, Table XLIII
Sixth level, ozone mixing ratio	4	34-37	10^{-2} gm/gm	

1 All pressure level codes will be present. Associated ozone mixing ratio may be set to fill value (nines, signed negative). Unneeded fields in a logical record will be set to fill value.

TABLE XVI

Indicator for data-processing technique used by satellite data producer (for tropopause level SBUV total ozone and SBUV ozone profiles)

Code Figure	Description
00	Processing technique not specified
01	Statistical regression
02	Total ozone - interpolation of precomputed tables based on ratios of measured radiances
03	Vertical ozone profiles - profile inversion using the pressure increment method.
04	Vertical ozone profiles - optimum statistical method weighted by confidence in climatological model at pressure levels and by radiance noise.
05	Average with equal weight

(Appendix 10, Appendix A) - ADDITION

TABLE XLI

SBUV TOTAL OZONE QUALITY FLAGS

CODE FIGURE	DESCRIPTION
00	Most accurate data
01	Near terminator data (acceptable, but less accurate)
02	Descending orbit data (acceptable accuracy, may be redundant[1])
03	Descending orbit data near terminator (acceptable but less accurate, may be redundant[1])

[1]Redundant - more accurate ascending orbit data (lower solar zenith angles) may be available for same location.

(Appendix 10, Appendix A) - ADDITION

TABLE XLII

SBUV OZONE AMOUNTS PRESSURE LAYERS

CODE FIGURE	PRESSURE LAYER RANGE (mb)
1	0.00 - 0.24
2	0.24 - 0.50
3	0.50 - 0.99
4	0.99 - 1.98
5	1.98 - 3.96
6	3.96 - 7.91
7	7.91 - 15.81
8	15.81 - 31.71
9	31.71 - 63.33
10	63.33 - 126.66
11	126.66 - 250.31
12	250.31 - 1013.25

(Appendix 10, Appendix A) - ADDITION

TABLE XLIII

SBUV OZONE MIXING RATIO PRESSURE LEVELS

CODE FIGURE	PRESSURE LEVEL (mb)
01	0.3
02	0.4
03	0.5
04	0.7
05	1.0
06	1.5
07	2.0
08	3.0
09	4.0
10	5.0
11	7.0
12	10.0
13	15.0
14	20.0
15	30.0
16	40.0